Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Inquiry Concerning Deployment of	)	CC Docket No. 98-146
Advanced Telecommunications Capability to	)	
All Americans in a Reasonable And Timely	)	
Fashion, and Possible Steps To Accelerate	)	
Such Deployment Pursuant To Section 706	)	
of the Telecommunications Act of 1996	)	

REPLY COMMENTS OF HUGHES NETWORK SYSTEMS, HUGHES COMMUNICATIONS GALAXY, INC. AND HUGHES COMMUNICATIONS, INC.

Hughes Network Systems, a division of Hughes Electronics Corporation, Hughes Communications Galaxy, Inc., and Hughes Communications, Inc. (collectively, "Hughes") hereby reply to the comments filed in response to the Commission's Third Notice of Inquiry[1] in this proceeding.

The comments filed in this proceeding confirm that vast portions of the United States population do not have access to terrestrial broadband networks, and that for those that do have access to broadband service, there is often limited, if any, competition in the provision of the service. Satellite-based broadband providers, such as Hughes, have the ability to provide services to all Americans throughout the nation without facing many of the technical and financial limitations that make broadband deployment by terrestrial providers impracticable in

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[1] *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable And Timely Fashion, and Possible Steps To Accelerate Such*

many rural or otherwise underserved areas. The important role of satellite providers is confirmed by the commenters to this proceeding. The comments also confirm that lack of sufficient spectrum allocations for satellites may severely limit satellite broadband service from achieving its full potential. Therefore, in response to the comments of others, Hughes restates its call for the Commission to fulfill its statutory mandate to ensure the deployment of advanced services to all Americans by designating sufficient Ka band spectrum for service to ubiquitous terminals to support the need for next-generation high-speed satellite broadband services.

I. ADVANCED TELECOMMUNICATIONS CAPABILITY IS NOT BEING DEPLOYED TO ALL AMERICANS ON A REASONABLE AND TIMELY BASIS

The majority of the commenters in this proceeding agree with Hughes that advanced services are not being deployed to all Americans in a reasonable and timely fashion using terrestrial technologies. Today, many communities continue to lack any form of terrestrial broadband service at all.[2] The comments also highlight that there is more than just a rural problem,[3] as even in those communities where broadband service is available, competition – *i.e.*,

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Deployment Pursuant To Section 706 of the Telecommunications Act of 1996, FCC 01-223 (rel. Aug. 10, 2001) ("*Third NOI*").

2 *See, e.g.*, Comments of the City of Plano at 3 (noting that advanced telecommunications capability is not available to almost 40% of Plano residents); Comments of the Commonwealth of the Northern Mariana Islands at 3 (stating that there is no DSL service provided to the Commonwealth); Comments of the National Grange of the Order of Patrons of Husbandry, at 2 (stating that advanced telecommunications services are "plainly not being deployed to all Americans, especially to Americans living in farming and rural communities) ("Comments of National Grange"); Comments of State of Alaska at 2 (stating that high-speed and advanced services are not available to most of Alaska); Comments of Ruby Ranch Internet Cooperative Association, at 4-5 (discussing numerous reasons for the unavailability of advanced services) ("Comments of Ruby Ranch"); Comments of Wireless Communications Association International, Inc. at 2 (stating "substantial portions of states having significant non-urban populations still have no high-speed Internet access service . . . .") ("Comments of WCAI").

3 Comments of the City of Plano at 1 (describing a "significant 'geographical divide' within the city"); Comments of New Networks at 5 – 6 (discussing state initiatives to

the existence of more than one terrestrial provider of advanced services – is exceedingly rare.[4] Thus, the pace of deployment and the terms of provision of advanced services via terrestrial technologies do not meet the Commission's objectives.

Commenters also raise serious concerns that the Commission's deployment data may be inaccurate and that it masks the extent to which many communities lack connectivity to advanced services. In its *Third NOI*, the Commission touts zip codes "served" as a measure of success.[5] A rural zip code can easily cover more than 100 miles. However, a number of commenters correctly explain that zip codes "served" is not a meaningful measure of success.[6] If only one large business or a handful of residents in a 100-mile rural zip code obtain access to advanced services, it is misleading to claim that many in the zip code are "served."[7] This problem also exists with respect to cities. For example, there are some areas within zip codes that cover the City of Plano, Texas that are "served," but there are large pockets within that 245,000 person city that do not have service from a terrestrial provider.[8]

An ongoing study by the Futron Corporation, commissioned by Hughes, underscores the observations of commenters that, to date, terrestrial broadband deployment has not proceeded adequately. As illustrated in the map at Exhibit A, only four basic trading areas in

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remedy the lack of deployment to rural and low income areas and government institutions).

4 Comments of WCAI at 4 ("[m]ore is made of cable versus DSL than there needs to be. Because if you are able to choose between cable and DSL, you are one of the chosen few"); Comments of WorldCom at 1 (the Commission's data demonstrates that the Regional Bell Operating Companies have a monopoly over ASL services.).

5 *Third NOI* at ¶¶ 13-17.

6 Comments of National Grange at 2-3; Comments of City of Plano at 2; Comments of Ruby Ranch at 19.

7 Comments of National Grange at 2-3; *see* Comments of Ruby Ranch at 19.

the United States have reached 10 percent penetration of households for DSL and cable broadband service combined.[9] In the vast majority of the country, less than four percent of all households subscribe to cable or DSL service.[10] Similarly, the map at Exhibit B demonstrates the limited deployment of terrestrial fixed wireless services.[11] As Exhibit C shows, ten states completely lack fixed wireless services, while nearly all states have large gaps where no fixed wireless services are deployed.[12] Further, fixed wireless deployment is likely to retract further as three major fixed wireless companies are now operating under bankruptcy and are at risk of ceasing, or already have ceased, operations.

The problems faced by terrestrial advanced services providers underscore the importance of satellite broadband services. Satellite broadband services are essential to meeting the Commission's statutory mandate to ensure the widespread deployment and competitive provision of advanced services to all Americans.

II. SATELLITE-DELIVERED BROADBAND SYSTEMS NEED SUFFICIENT SPECTRUM TO MEET THE NEEDS OF THE PUBLIC

The comments filed in response to the *Third NOI* also confirm the crucial role that satellite broadband services, such as DIRECWAY, currently have in the availability of broadband services, and the great future potential of systems, such as SPACEWAY, that will offer advanced services. As the comments demonstrate, two-way high-speed satellite services,

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8 Comments of City of Plano at 2.

9 *See* Exhibit A.

10 *Id.*

11 *See* Exhibit B.

12 *See* Exhibit C.

which have just begun to be offered, have the fastest rate of growth in subscribership.[13] SBC Communications Inc., citing a report by the Yankee Group, notes the potential for satellite providers to serve 90 million households with broadband access and to "become the strongest broadband competitor in rural markets where cable modem and DSL are unavailable."[14]

Hughes currently provides broadband services on a nationwide basis through its DIRECWAY Ku band service and its service partners. As stated by the National Rural Telecommunications Cooperative ("NRTC"), "Ku-band satellite services are the comprehensive solutions, without which rural America will be left on the sidelines."[15] These services meet the Commission's definition of "high-speed" services.[16] The download speeds for DIRECWAY Ku band services reach in excess of 400 Kbps. Although some commenters have noted that currently deployed Ku band services do not support upstream data rates faster than 200 Kbps,[17] Hughes does not believe that is an issue. It is the download speed – getting information and services to the customer – that is of primary importance, especially to residential and small business users that want to obtain and view information at broadband speeds, but have far less need for sending information at speeds exceeding 200 Kbps. The "broadband experience" with satellite broadband services is fully comparable to cable modem and DSL services. As NRTC

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13 Comments of AT&T Corp. at 7.

14 Comments of SBC Communications Inc. at 4.

15 Comments of National Rural Telecommunications Cooperative at 4 (Comments of NRTC).

16 *Third NOI* at ¶ 5. High-speed services are those services with over 200 Kpbs capability in at least one direction. *Id.*

17 *See, e.g.*, Comments of NRTC at 3; Comments of Ruby Ranch at 16.

explains in its comments, satellite broadband already "offers the potential for improved distance learning, telemedicine, and e-commerce to all points in the continental United States."[18]

Even as Hughes currently offers Ku band broadband services throughout the nation, it will soon launch its new SPACEWAY Ka band geostationary satellite system, which will meet the definition of advanced services – providing super-fast download speeds of up to 30 Mpbs and uplink rates reaching from 512 Kbps for the smallest terminals available to individual users, to tens of Mbps for business and major hubs. This system will be able to offer such services to almost every American soon after its planned commencement of services in early 2003. As NRTC predicts, "if current business and technology trends continue, Ka-band services could reach rural homes before most urban areas have access to extensive fiber networks, fixed wireless, or 3G mobile networks."[19] The potential for Ka band services is virtually boundless – limited only by the bandwidth available.

The potential of satellite-delivered services is threatened, however, by the insufficient amount of unshared (clear) Ka band spectrum suitable for the next generation of services that this Commission has designated for services, such as SPACEWAY, that use small ubiquitously deployed terminals to maximize the ability to provide service. Ruby Ranch makes this point in its comments, stating, "[I]f everyone in the US who wants advanced telecommunications services . . . were to sign up tomorrow for satellite Internet service, the service would slow to a crawl. *There is nowhere near enough bandwidth available in present*

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[18] Comments of NRTC at 9.

[19] *Id.* at 8.

satellites to serve a substantial fraction of US households or businesses."[20] Hughes does not suggest that satellites can or should be the only way that wireless Internet service is provided. But Ruby Ranch correctly observes that additional spectrum is needed to support the provision of broadband satellite services. Hughes reasserts its call for the Commission to make at least 1 GHz of clear Ka band spectrum available for ubiquitously deployed broadband terminals. *The failure to do so would constrain the ability of satellite broadband operators to provide much needed broadband services to the greatest number of Americans.*

III. CONCLUSION

Almost all of the comments filed in response to the *Third NOI* request that the Commission take action to improve the speed and breadth of deployment of advanced services. Satellite broadband services must be an important part of the Commission's plans to ensure that all Americans have access to advanced services. In order to facilitate the ability of satellite broadband service providers to meet growing demand and continue to compete with terrestrial providers of advanced services, the Commission should make available at least 1 GHz of clear Ka band spectrum for the operation of such services to small, ubiquitously deployed terminals.

[20] Comments of Ruby Ranch at 15 [emphasis added].

Respectfully submitted,

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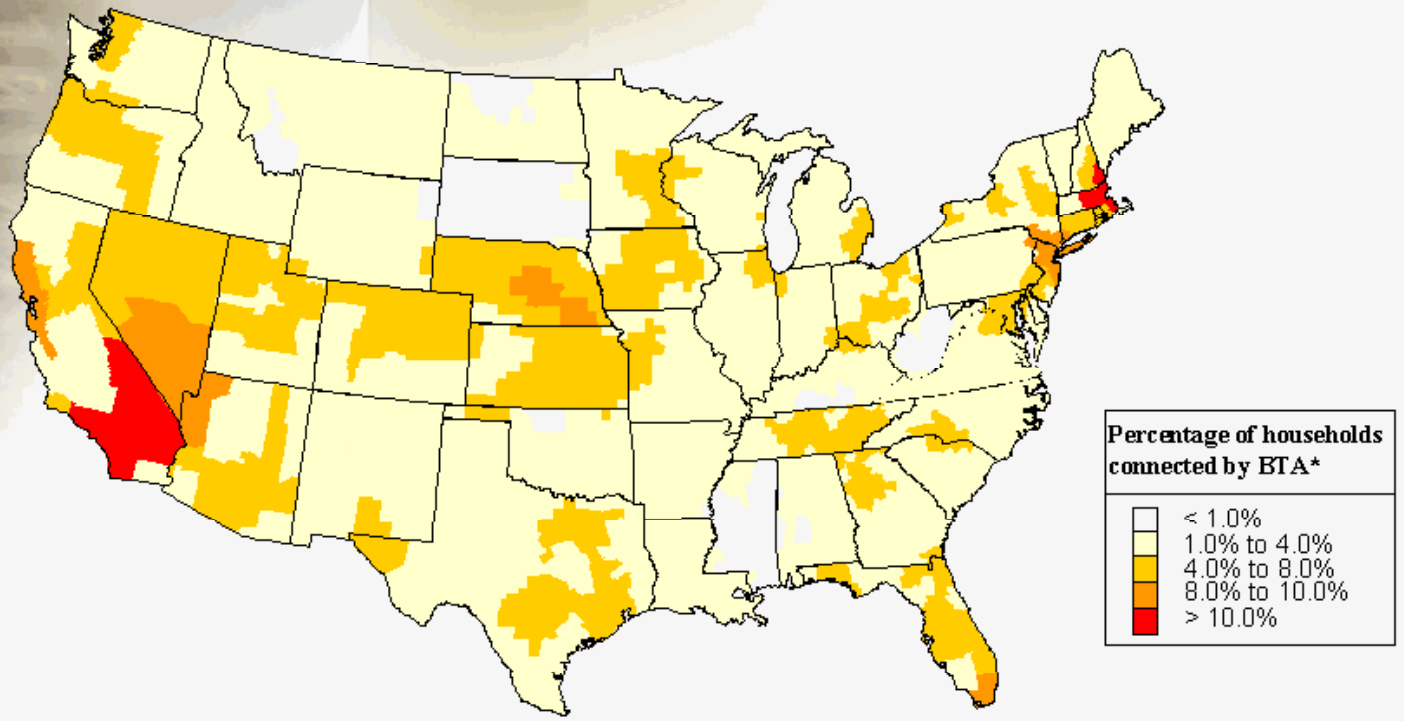
EXHIBIT A

Penetration of DSL and Cable Broadband Service is Low Nationwide



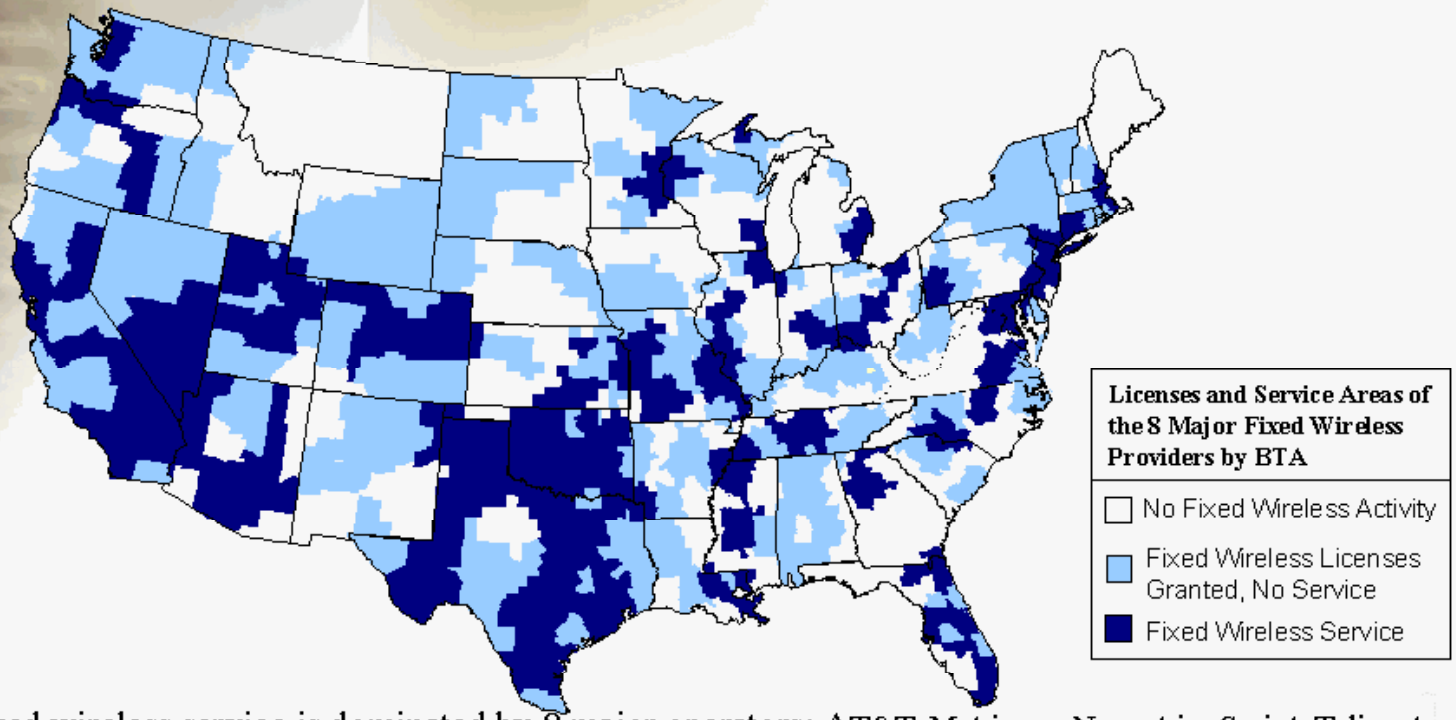
Only four basic trading areas reach 10% penetration of households

Source: FCC. "High-Speed Services for Internet Access: Subscribership as of December 31, 2000"

* Basic Trading Areas delineated by the Rand McNally 1992 Commercial Atlas & Marketing Guide, 123rd Edition, at pages 38-39; extended and revised by the Federal Communications Commission, 59 FR 46195 (September 7, 1994)

EXHIBIT B

Fixed Wireless Has Not Brought Broadband Access to Rural America



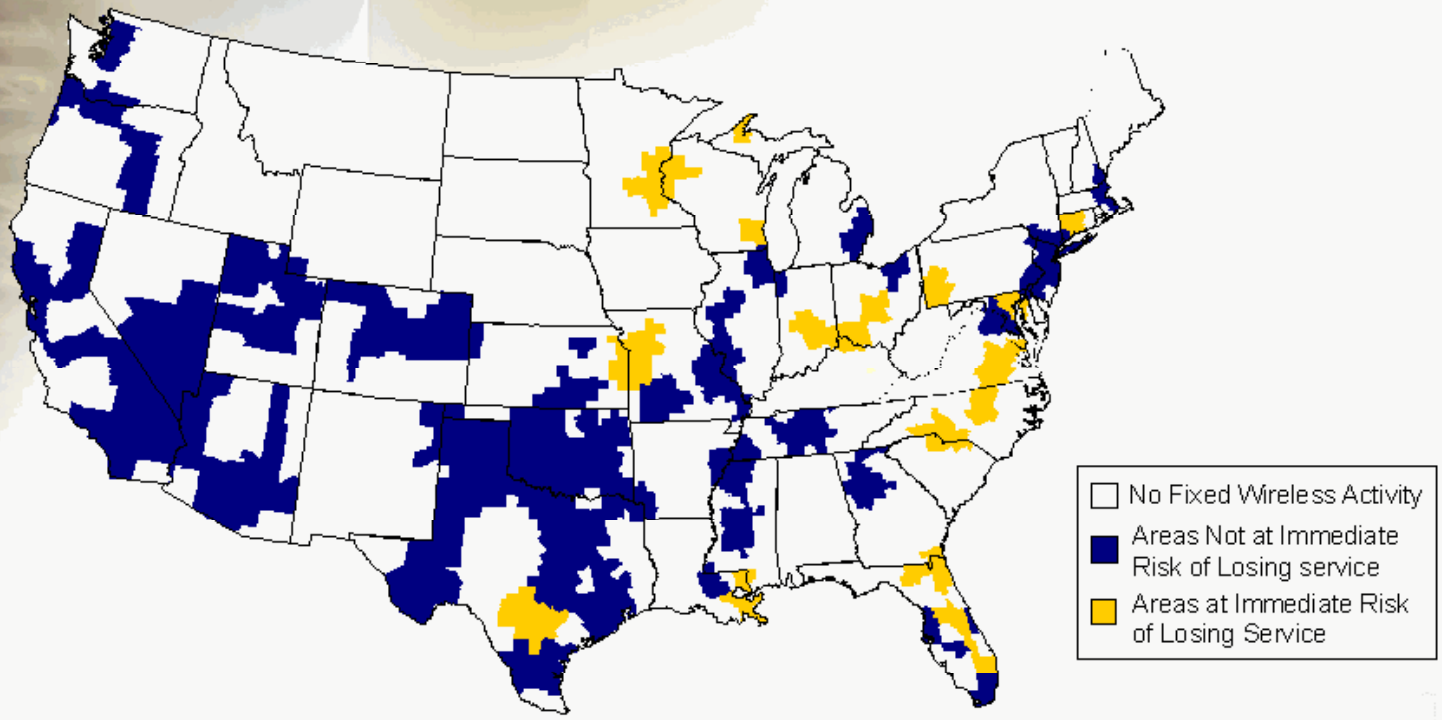
Fixed wireless service is dominated by 8 major operators: AT&T, Metricom, Nucentrix, Sprint, Teligent, Winstar, WorldCom, and XO

These providers are licensed in 57% of U.S. basic trading areas, **however**, broadband service is available in only 16% of U.S. BTAs

Source: Futron analysis

EXHIBIT C

Already Limited Fixed Wireless Deployment Will Decline Further



Customers in the 20 basic trading areas at immediate risk are served only by companies that are currently under Chapter 11 protection

Source: Futron analysis